

WHAT IS CLAIMED IS:

1. A

1. A printer comprising:

- (a) a printing processor for printing at least one of text and graphics;
- (b) a holder for holding a replaceable unit used in conjunction with the printing processor;
- (c) a detection processor for detecting at least one of mounting and replacement of the replaceable unit in the holder;
- (d) nonvolatile memory comprising a plurality of areas for storing data;
- (e) a counting processor for metering an amount related to a specific function of the replaceable unit; and
- (f) a storage processor for storing a cumulative amount relating to the specific function metered by the counting processor in a specific area of the memory, and when the detection processor detects that the replaceable unit is replaced, storing separate cumulative amounts relating to the metered specific functions of separate replaceable units, and storing in a specific area of memory a total amount relating to the specific function.

2. A printer as in claim 1, wherein the replaceable unit comprises a cutter device for cutting a print medium on which the printing processor prints text or graphics, and the counting processor meters the number of times the cutter device cuts the print medium.

3. A printer as in claim 1, wherein the replaceable unit comprises an ink cartridge for supplying ink for the printing processor to print text or graphics, and the counting processor meters the amount of ink supplied in printing.

4. A printer as in claim 1, wherein the replaceable unit comprises a print head for printing text or graphics, the printing processor prints text or graphics by driving the replaceable print head installed in the holder, and the counting processor calculates a print head drive count when printing text or graphics.

5. A printer as in claim 1, wherein the replaceable unit comprises an operating unit related to the printing operation of the printer.

6. A printer as in claim 1, wherein the replaceable unit comprises a consumable of the printer.

5 7. A printer as in claim 1, further comprising a reporting processor that reports to the printing processor information relating to amounts associated with at least one specific function stored in memory in response to a specific operation of the printer, and the printing processor printing the reported information.

8. A printer as in claim 7, further comprising a data communication processor connected to an external device for sending and receiving data therewith;

the reporting processor reporting to the printing processor information relating to amounts associated with at least one specific function stored in memory in response to a specific command from the external device, and

the printing processor printing the reported information.

15 9. A printer as in claim 8, wherein the external device comprises a host computer,

the reporting processor reports to the data communication processor information relating to amounts associated with at least one specific functions stored in memory in response to a specific command from the host computer, and

the data communication processor sends the information to the host computer.

20 10. A printer as in claim 1, further comprising a time information obtaining means for obtaining time information comprising at least date information identifying when a replaceable unit is replaced, and

the storage processor storing the date information in memory in correlation 25 with the amount of the specific metered function at the time the part or device is replaced.

11. A printer as in claim 10, further comprising a real-time clock and the time information obtaining means is for reading the real-time clock.

12. A printer as in claim 10, further comprising an interface connecting to a host computer, and the time information obtaining means comprises a communication controller for obtaining time information from the host computer.

13. A printer comprising:

(a) a printing processor for printing at least one of text and graphics;

(b) a holder for holding a replaceable unit used in conjunction with the printing processor;

(c) a detection processor for detecting at least one of removal, installation, and replacement of the replaceable part in the holder;

(d) nonvolatile memory comprising a plurality of areas for storing data;

(e) a counting processor for metering an amount relating to a specific function of the replaceable unit;

(f) a time information obtaining means for obtaining time information comprising at least date information; and

(g) a storage processor for storing a cumulative amount relating to the specific function metered by the counting processor in a specific area of the memory, and when the detection processor detects that the replaceable unit is replaced, storing in memory amounts relating to the specific metered functions of the replaceable unit in conjunction with at least one of the date of the installation and replacement obtained from the time information obtaining means.

14. A printer as in claim 13, further comprising

(h) usage limit memory for storing a limit value indicative of at least one of a maximum usable volume and count associated with the specific function of the replaceable unit; and

(i) a signal output section for outputting a signal indicative that one of the usage amount and count associated with the specific function of the replaceable unit is one of near and at the stored usage limit value; and

5 the storage processor stores the time information, including at least date information, obtained from the time information obtaining means in memory in correlation with the replaceable unit when the signal output section outputs said signal.

10 15. A printer as in claim 13, wherein the replaceable unit comprises an ink cartridge, the amount associated with the specific function is an ink discharge count, and the counting processor comprises a discharge counter.

15 16. A control method for a printer having a printing processor for printing at least one of text and graphics, a holder for holding a replaceable unit used in conjunction with the printing processor, and nonvolatile memory having a plurality of areas for statically storing data, the control method having:

20 (a) a detection step of detecting at least one of removal, installation, and replacement of the replaceable unit in the holder;

(b) a counting step of metering an amount relating to a specific function of the replaceable unit starting when the detection step detects that a replaceable part unit has been one of removed, installed, and replaced;

(c) a storage step of storing the metered amount counted before the detection step in a specific memory area for a replaced unit; and

(d) a reporting step of reporting to a specified processor, in response to a notification command, information indicative of the amount counted in the counting step.

25 17. A printer control method as in claim 16, wherein the replaceable unit comprises a cutter device for cutting a print medium on which the printing processor prints text or graphics, and

the counting step counts a number of times the cutter device cuts the print medium.

18. A printer control method as in claim 16, wherein the replaceable unit comprises an ink cartridge for supplying ink for the printing processor to print text or 5 graphics, and

the counting step meters an amount of ink supplied in printing.

19. A printer control method as in claim 16, wherein the replaceable unit comprises a print head for printing text or graphics, the printing processor prints text or graphics by driving the replaceable print head installed in the holder, and the 10 counting step counts a print head drive count when printing text or graphics.

20. A printer control method as in claim 16, further comprising a receiving step of receiving from an external device a command requesting notification of an operating amount of a specific function; and

15 a reporting step of reporting to the external device at least one specific operating amount stored in memory.

21. A printer control method as in claim 16, further comprising a receiving step of receiving from an external device a command requesting printing an operating amount of a specific function;

20 a reporting step of passing to the printing processor at least one specific operating amount stored in memory; and

a printing step of printing the at least one specific operating amount with the printing processor.

22. A printer control method as in claim 16, wherein the printer comprises a time information obtaining means, the printer control method further comprising:

a step of storing in memory at least date information indicating when the replaceable unit was at least one of removed, installed and replaced in response to detection of one of removal, installation, and replacement in the detecting step.

23. A control method for a printer having a printing processor for printing at least 5 one of text and graphics, a holder for holding a replaceable unit used in conjunction with the printing processor, nonvolatile memory comprising a plurality of areas for storing data, and a time information obtaining means for obtaining at least date information, comprising:

(a) a detection step of detecting at least one of removal, installation, and 10 replacement of a replaceable unit in the holder;

(b) an accumulation step of, when the detection step detects that a replaceable unit has been one of removed, installed, and replaced, calculating a cumulative amount relating to a specific function of a functional part of the replaceable unit starting from detection of one of removal, installation and replacement; 15

(c) a step of obtaining at least the date when one of removal, installation, and replacement of a replaceable unit is detected; and

(d) a storage step of storing in a specific area in memory, separately for 20 each of one of a removed, installed and replaced unit, a cumulative amount relating to a specific function of the replaceable unit in correlation with the date information.

24. A printer control method as in claim 23, further comprising:

(e) a comparison step of comparing said cumulative amount with a usage 25 limit value stored in a specific area of the memory, said limit value indicative of a maximum one of usable volume and count associated with the specific function of the replaceable unit;

(f) a step of outputting an alarm signal indicative that one of the usage amount and count associated with the specific function of the replaceable unit is one of near or at the stored usage limit value; and

(g) a storage step of storing time information, including at least date information, in memory in correlation with the replaceable unit when the alarm signal is output.

25. A medium readable by a machine embodying a program of instructions executable by the machine to perform a control method for a printer having a printing processor for printing at least one of text and graphics, a holder for holding a replaceable unit used in conjunction with the printing processor, and nonvolatile memory having a plurality of areas for statically storing data, the control method having:

10 (a) a detection step of detecting at least one of removal, installation, and replacement of the replaceable unit in the holder;

(b) a counting step of metering an amount relating to a specific function of the replaceable unit starting when the detection step detects that a replaceable part unit has been one of removed, installed, and replaced;

15 (c) a storage step of storing the metered amount counted before the detection step in a specific memory area for a replaced unit; and

(d) a reporting step of reporting to a specified processor, in response to a notification command, information indicative of the amount counted in the counting step.

20 26. A printer comprising:

(a) a printing processor that prints at least one of text and graphics;

(b) a holder that holds a replaceable unit used in conjunction with the printing processor;

25 (c) a detection processor that detects at least one of removal, installation, and replacement of the replaceable part in the holder;

(d) nonvolatile memory comprising a plurality of areas that store data;

(e) a counting processor that meters an amount relating to a specific function of the replaceable unit;

(f) a time information obtaining unit that obtains time information comprising at least date information; and

(g) a storage processor that stores a cumulative amount relating to the specific function metered by the counting processor in a specific area of the memory,
5 and when the detection processor detects that the replaceable unit is replaced, stores in memory amounts relating to the specific metered functions of the replaceable unit in conjunction with at least one of the date of the installation and replacement obtained from the time information obtaining unit.

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